IN THE CLAIMS:

Please amend claims 1, 3, 21 and 22 as follows:

1. (Currently Amended) A thermostatic mixing valve having a hot water inlet for connection to a supply of hot water, a cold water inlet for connection to a supply of cold water, an outlet for temperature controlled water, valve means for controlling the relative proportions of hot and cold water admitted to a mixing chamber, the outlet communicating with the mixing chamber to receive temperature controlled water having a desired temperature, temperature control means for adjusting the valve means in accordance with the desired temperature of the temperature controlled water, each inlet communicating with a respective multi-stage plenum chamber constructed and arranged to distribute flow of water to porting of the valve means for admitting the water to the mixing chamber, wherein each said multi-stage plenum chamber has an annular inner chamber associated with said porting and an annular outer chamber separated from said inner chamber by partition means arranged so that water flows from said outer chamber into said inner chamber at a position axially spaced from said porting.

2. (Original) A thermostatic mixing valve according to claim 1 wherein each plenum chamber is of similar size and shape so that the distribution of flows is substantially the same.

3. (Currently amended) A thermostatic mixing valve according to claim 1 wherein each inlet ~~communicates with an annular outer chamber of a two stage~~multi-stage plenum chamber includes two stages and each inlet communicates with said annular outer chamber~~having an annular inner chamber separated from the outer chamber by partition means arranged so that water flows around the outer chamber and into the inner chamber at a position axially spaced from porting of the valve means~~.

4. (Original) A thermostatic mixing valve according to claim 3 wherein the partition means separating the outer and inner chambers comprises an annular wall provided with at least one opening providing a substantially uniform distribution of the water flow around the inner chamber.

5. (Withdrawn) A thermostatic mixing valve according to claim 4 wherein the opening is in the form of a continuous annular slot in the wall between the outer and inner chambers.

6. (Original) A thermostatic mixing valve according to claim 4 wherein the opening is in the form of a series of slots or holes of uniform size and shape formed in the wall between the outer and inner chambers with a regular spacing between the slots in the circumferential direction.

7. (Original) A thermostatic mixing valve according to claim 4 wherein the opening is offset relative to the point at which the water flow enters the outer chamber.

8. (Original) A thermostatic mixing valve according to claim 1 wherein the valve means comprises a shuttle valve mounted for axial movement relative to annular hot and cold seats to vary the relative proportions of hot and cold water admitted to the mixing chamber, wherein the hot and cold seats are positioned between opposed annular sealing faces of the shuttle valve for co-operating with the hot and cold seats.

9. (Withdrawn) A thermostatic mixing valve according to claim 8 wherein the hot and cold seats are provided by opposite sides of a thin, annular seating member such that the hot and cold flows enter the mixing chamber at substantially the same axial position.

10. (Original) A thermostatic mixing valve according to claim 8 wherein guide means is provided to maintain the sealing faces square relative to the valve seats.

11. (Withdrawn) A thermostatic mixing valve according to claim 1 wherein the valve means comprises a spool valve mounted for axial movement relative to an annular flow separator to vary the relative proportions of hot and cold water admitted to the mixing

chamber, the spool valve comprising a cylindrical shuttle axially movable relative to an O-ring to vary the area of axially extending slots in the shuttle to the flows of hot and cold water, wherein the slots are inclined to the longitudinal axis of the shuttle so that the flows of hot and cold water are offset in the circumferential direction.

12. (Original) A thermostatic mixing valve according to claim 1 wherein the mixing chamber is arranged so that incoming streams of hot and cold water are turned to flow in the same direction such that flow of the hot stream entrains and assists flow of the cold stream.

13. (Original) A thermostatic mixing valve according to claim 1 wherein the mixing chamber has a cross-sectional area relative to the combined cross-sectional areas of the hot and cold flows such that the velocity energy of the hot and cold flows is sufficient to create turbulent flow conditions within the mixing chamber.

14. (Original) A thermostatic mixing valve according to claim 1 wherein the cross- sectional area of the mixing chamber is from 1 to 1.5 times the combined cross-sectional areas of the hot and cold flows and the axial length of the mixing chamber is at least 5 times the width of the mixing chamber.

15. (Original) A thermostatic mixing valve according to claim 1 wherein the mixing chamber is sized to match the total flow through the valve.

16. (Withdrawn) A thermostatic mixing valve according to claim 1 wherein each of the flows of hot and cold water is admitted to the mixing chamber at a plurality of openings with the hot flow openings being offset relative to the cold flow openings so that the flows of hot and cold water interlace.

17. (Withdrawn) A thermostatic mixing valve according to claim 16 wherein the hot flow openings alternate with the cold flow openings in the circumferential direction.

18. (Withdrawn) A thermostatic mixing valve according to claim 1 wherein flow control valves are provided between the inlets and each plenum chamber and are linked for operation simultaneously by a common control member for controlling the flows of hot and cold water separate from the temperature control.

19. (Withdrawn) A thermostatic mixing valve according to claim 1 wherein the temperature control and flow control are linked to control the flows of hot and cold water

in sequence whereby the cold water flow is turned on first during start-up and the hot water flow is turned off first during close-down.

20. (Original) A thermostatic mixing valve according to claim wherein the valve comprises a main body having the inlets for connection to the hot and cold supplies and the outlet for connection to an ablutionary appliance and an opening for reception of a cartridge unit housing the valve means, wherein the outer chamber of each plenum chamber is defined between the valve body and the cartridge unit with the inner chamber being formed inside the cartridge unit and communicating with the outer chamber via at least one opening in the wall of the cartridge unit.

21. (Currently Amended) A thermostatic mixing valve for hot and cold water has two-stage inlet chambers for the hot and cold water flows respectively, the inlet chambers being arranged to distribute the flows uniformly with respect to porting for admitting the flows to a mixing chamber to reduce asymmetric flow patterns and promote thorough mixing of the flows within the mixing chamber, each said inlet chamber has an outer chamber communicating with one of the inlets, an inner chamber associated with porting of the valve means, and at least one opening for water to enter the inner chamber axially spaced from the porting.

22. (Currently Amended) A method of reducing asymmetric flow patterns and promoting thorough mixing of flows of hot and cold water within a mixing chamber of a thermostatic mixing valve comprises providing multi-stage inlet chambers for the hot and cold water flows respectively, and arranging the inlet chambers to distribute the flows uniformly with respect to porting for admitting the flows to a mixing chamber, each said multi-stage ~~plenum~~inlet chamber has an outer chamber communicating with one of the inlets, an inner chamber associated with porting of the valve means, and at least one opening for water to enter the inner chamber axially spaced from the porting.